

REMARKS/ARGUMENTS

Independent claims 1 and 36 have been amended in an effort to define the disclosed subject matter more clearly and distinctly. Claim 35 has been converted into a claim dependent on claim 1. Particularly, as now amended, these claims are respectfully submitted clearly to be patentable over Kim et al, cited under 35 U.S.C. 103(a).

Kim et al disclose a reaction vessel with crystallization units comprised of **central** reaction chambers 28 surrounded by four drop chamber (reaction areas) 32 **outside** the central reaction chambers. Reaction areas 32 are in communication with each central reaction chamber 28 by diffusion channels 30. The central reaction chamber, the reaction areas and the diffusion channels of each unit are open on top, and they may be covered by a glass cover. The bottoms of cup-shaped drop chambers 32, as well as the underside of glass cover slips 46 serve as reaction areas for the crystallization. Drops of solution to be crystallized may be suspended from the cover slips and hang down into the reaction areas (drop chambers) 32. The arrangement of the reaction vessel as well as the individual crystallization units are well illustrated in the patent drawings.

Referring more particularly to col. 6, lines 8-24, and Figs. 4 and 5 of the cited patent, the Examiner has alleged that the "optimization of the geometry of the chamber is suggested" by the patent. Applicants respectfully disagree. As is clear from the drawing and explained in col. 3, lines 47-54, each drop chamber 32 **outside** the **central** reservoir 28 is directly or indirectly connected thereto. This central reservoir (reaction chamber) has lower surface 34, upper portion 36 and lower portion 38, and is of generally **cylindrical** shape (col. 4, line 30). As shown, the central reaction chamber as well as the surrounding reaction areas and the cover slips are generally **circular**. Throughout the description and the drawing, it is made explicit that there always is a **central** reaction chamber in communication with **surrounding** reaction areas **outside** of the central reaction chamber.

In the embodiment of Figs. 6 and 7, col. 6, lines 25-39, dividers 60 divide central reaction chamber 28' into four equal sections 58. While the dividers constitute common walls 60 separating the four reaction chamber **sections** from each other, this does in no way change the position of reaction areas 32' relative to the central reaction chamber, or suggests a common wall between immediately adjacent reaction chambers 28'. Nor

does it optimize the number of reaction chambers in the reaction vessel, as claimed, if the number of drop chambers 32 arranged around central reservoir 28 is varied (col. 6, 9-11), or if the drop chambers are arranged in series, as described in Col. 6, lines 16-24.

As clearly shown in Figs. 1, 2 and 7, crystallization units 26, with their **central** reaction chamber 28 **surrounded** by reaction areas 32, are **spaced** from each other, rather than being **immediately adjacent** each other, the surrounding reaction areas 32, which protrude from the central reaction chamber, defining a **necessary distance** between reaction chambers 28 in each row and in adjacent rows, which rows are again **necessarily spaced** from each other by the amount of protrusion of the surrounding reaction areas from the reaction chamber, rather than being **immediately adjacent** each other. As clearly shown in the drawing, considerable unused areas remain between **spaced-apart** reaction chambers. Even if a person of ordinary skill in the art would move crystallization units 26 closer together to increase the number of units, which actually is not suggested by Kim et al, the surrounding drop chambers would still leave **unused spaces** between the crystallization units because the protruding drop chambers 32 between adjacent reaction chambers 28 would prevent the reaction chambers to

become **immediately** adjacent. Thus, none of Kim et al's variations suggests a common wall demarcating **immediately adjacent** reaction chambers from each other (page 24, line 14).

While this was implied in the claims on file by stating that each reaction chamber **has** a reservoir and several reaction areas, this has been made **explicit** in amended claims 1 and 36 by stating that the reservoir and reaction areas are **inside** the **walled** reaction chambers (page 17, lines 5-8). In Kim et al, the reaction areas (drop chambers 32) are **outside** the walled reaction chamber (reservoir 28). In view of the above, claim 1 is respectfully submitted to be clearly patentable over Kim et al.

As shown in applicants' Figs. 4 and 6, the base surface or cross section of the reaction chambers preferably form a parallelogram or rectangle (page 22, line 12), thus covering the **entire** area of the reaction vessel. The **circular** cross sections of the reaction chambers and reaction areas exclusively shown in Kim et al do not suggest such a configuration, and these circular configuration of Kim et al's crystallization unit components causes additional unused areas to be formed. Thus, claims 7 and 53 are believed to be patentable on their own merits.

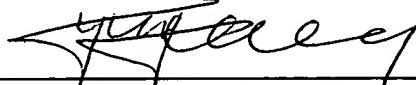
As to claim 35, the honeycomb arrangement of **prisms**, not cylinders or cups, also makes possible the full coverage of the reaction vessel area, for which reason this claim is respectfully submitted to be patentable on its own merits, as has been pointed out in connection with claims 7 and 53.

Nothing in Kim et al suggests another reaction area **formed by a recess** above the reservoir, i.e. in cover slips 46, as recited in claim 36 amended to incorporate therein the subject matter of claim 26, much less the configuration set forth in claim 27. This has the advantage that the reaction areas on the underside of the vessel top part can be arranged closer to each other, and the danger of overflow of two adjacent suspended drops during preparation and setting of the cover on a lower housing part is substantially reduced. Accordingly, claims 36 and 27 are believed to be clearly patentable.

A sincere effort having been made to overcome all grounds of rejection, favorable reconsideration and allowance of claims 1-3, 6-10, 12-24, 27-36, 38, 53 and 54 are respectfully solicited.

Respectfully submitted,

GUENTHER KNEBEL ET AL



Kurt Kelman, Reg. No. 18,628

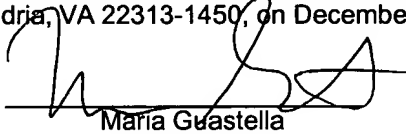
Allison C. Collard, Reg. No. 22,532

Edward R. Freedman, Reg. No. 26,048

Attorneys for Applicants

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576
(516) 365-9802

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MAIL STOP Non-Fee Amendment, COMMISSIONER FOR PATENTS, P.O. Box 1450, Alexandria, VA 22313-1450, on December 10, 2003.



Maria Guastella

R:\USERS\mittendorf\KELMAN\Knebel, G. et al - amend Dec. 03.wpd